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What Pears to Plant. Most Profitable Varieties.

BY E. SATTERTHWAITE.

I CONSIDER this the most important question connected with pear culture; and, unfortunately, it is as difficult as it is important, because, as every one now knows who has paid any attention to the subject, soil, location and treatment have so much to do with it. This difference in the success of the same variety in different situations is often very extraordinary and utterly unaccountable, as independent of soil, climate and culture, there seems to be some mysterious atmospheric influence which affects some varieties in particular in a most remarkable manner. White Doyenne, for instance, when grown in the city, nothing can be finer, and, when grown in the country, nothing could be more worthless. And this difference cannot be attributed to anything that is apparent, and is not materially affected by any mode of treatment.

What makes this question still more difficult, is the fact that varieties sometimes seem to undergo a change, perhaps run out, or become liable to forms of disease that are not common. Easter Beurre, for instance, a few years ago did remarkably well with me, and is now good for nothing, from a disease that has not affected any other variety.

From these remarks you may infer that I am not prepared to recommend, unqualifiedly, any special list of varieties, but will only name such as I have observed doing best.

From the light I now have, if I were to plant a pear orchard for market purposes, say of 3,000 trees, in the location I now am, at a short distance from a great market, I would plant the following varieties in about the proportion named: 20 Doyenne d'Ete, 10 Madeleine, 20 Early Catharine, 50 Beurre Giffard, 20 Osband's Summer, 20 Manning's Elizabeth, 20 Julienne, 20 Kirtland, 30 Bell or Windsor, 20 English Jargonnelle, 50 Ananas d'Ete, 100 Clapp's Favorite, 500 Bartlett, 300 Beurre de

Montgeron, 100 Seckel, 100 Buffum, 200 St. Michael Archange, 300 Duchesse d'Angouleme (on quince), 200 Beurre d'Anjou, 200 Rutter, 600 Lawrence, 100 Vicar of Winkfield, 20 Doyenne d'Alencon.

In addition to these there are some 20 other varieties that I would plant a few of for the purpose of testing further. Among these I would name Pendleton's Early York, Pulsiver, Beurre Benoist, Jefferson, Muskingum, Cushing, Boston or Penneo, Gen. Dutilleul, Island, Bezé de Quassai d'Eté, Marie Louise, Baron de Mello, Doyenne Rose, Gen. Todtleben, Dana's Hovey, and some of the newer varieties. All of these last named have done remarkably well with me, and some of them would probably prove to be valuable.

The list that I have given does not by any means comprise all the best varieties, and is but a small part of what might be desirable in an amateur's collection. They are selected with the object of keeping up a succession of profitable varieties for marketing, as I have been accustomed to, largely by retail, and where it is important to keep up a regular supply throughout the season. The number of varieties is much larger than Mr. Quinn recommends, and no doubt he is right where a different system of marketing is practiced.

It will be noticed that I have named quite a number of early sorts, a few trees of each. I have found this desirable, as early pears generally last so short a time that it is necessary to have a number of sorts to keep up a regular supply. At a distance from market, probably most or all of these had better be left out. I have named some sorts that it is not fashionable to recommend on account of their quality, as the Bell and Jargonelle; but it must be remembered that we are now only treating of profitable sorts for market, and I am convinced, from experience, that some of these very productive varieties, that are only good for cooking, are amongst the most profitable. A few of the varieties that I have named, B. de Montgeron, Ananas d'Ete, Butter and St. Michael Archange, are not found in the lists generally recommended; and, as they have not been extensively cultivated, I would not recommend others to plant them largely at first, as they might not do as well generally as they have done with me, especially as my treatment of pears is different from what is generally practiced. You will observe that there are a great many varieties of unquestionable excellence, that are commonly recommended, that I have not mentioned. I will name some of these, and my reasons for leaving them out. There are a great many fine varieties that ripen about the same time as the Bartlett, and are not in every respect equal to that variety, and, on that account, are not worth planting, as it is very desirable in growing pears for profit to have no more varieties than is necessary to keep up a regular supply. And then, there are many of the finest and most productive varieties that have no beauty of color, or do not generally color well, and on that account are valueless for market. Among these may be mentioned Rostiezer, Belle Lucrative, Flemish Beauty, Des Nonnes, Beurre Superfin, Kingsessing and Beurre Diel. Some varieties rot as soon as ripe, and are worth but little on that account. Amongst these I must place Doyenne Boussock, Beurre Superfin and Flemish Beauty. Some have a worse fault, of rotting badly before they get ripe. Beurre Bosc, Sheldon, and many others have this fault. There are some very fine pears, that color splendidly, too, that have such delicate skins that, with the most

careful handling, will not look well in market. The Howell has this fault. Some kinds are too small, as Dearbon's Seedling, Amire Joannet, etc. One of the worst faults that pears are subject to is a bad habit of dropping prematurely, or liability to be easily blown off with every storm. Flemish Beauty, Kingsessing, Beurre Clairgeau and Beurre d'Anjou (to some extent), and many others have this fault.

There are doubtless varieties that I have not mentioned that would do better with you than some I have have recommended. Louise Bonne de Jersey is a variety that in many places does splendidly, but does poorly with me. B. Clairgeau has a high reputation, and might do well with you; it is worthless here.

While I think it a great disadvantage to have too many sorts, I would not like to be confined to so few as Mr. Quinn recommends, for the reason that the most productive and certain varieties are very liable to fail. Duchesse d'Angouleme, for instance, very often misses a crop. Bartlett, with me, is liable to injury in severe winters, and is not at all certain; so that I find it most satisfactory to have three or four sorts ripening at a time, and not depend entirely on one.

There is very much more that might be said on this subject, but as I have given to the public my experience in pear culture rather extensively only one winter ago, I prefer saying no more, at present, on that subject. After another year's experience, and during the leisure of another winter, I might be able to give more at length, as you suggest, my experience with the different varieties of pears, for the benefit of the readers of your valuable journal.

Jenkintown, Pa.

The Profits of Strawberry Culture.

ALTHOUGH much is stated occasionally about the profits of strawberry culture, yet little light is given as to the cost or the expenses. We therefore reproduce an article just written by Henry Thacker, of the Oneida Community, showing what, in his estimation, it costs yearly to keep up a bed of strawberries. He places the production of the crop at 300 bushels per acre, but we do not advise any dependence upon a steady average like that, for it is never realized year after year. Such crops are only occasional, and beginners are often misled by them:

"It is to be regretted that so few statistics are given to the public, showing the profits or losses in the cultivation of the strawberry crop. Frequent statements of this kind would be of much value to beginners and persons wishing to invest in the business. That it proves to be a profitable crop may at least be inferred from the increasing number of persons yearly engaging in the business. Our own experience also goes to show that strawberries may be grown with profit. It has been stated that in New Jersey, where the strawberry is largely grown for market, the average crop does not exceed eighty bushels per acre. It has also been estimated that the crop in other sections does not, on an average, exceed one hundred bushels to the acre. In such circumstances we can scarcely see how the crop as a whole can be a very profitable one, except on the supposition that the fruit is sold above ordinary prices. But no strawberry grower should be satisfied with the production of any such quantity per acre, when actual experiment has proved that 300 bushels of such a

variety as Wilson's Albany Seedling can be produced from an acre. A strawberry grower stated that he had the past season produced at the rate of 350 bushels to the acre, and was confident that the maximum quantity of 400 bushels to the acre may be reached.

"My object in this communication is, however, mainly to give the cost of cultivation of one acre of strawberries by the Community the past season. Here are the statistics:

35 loads of stable manure, at $2.00	$70 00
Hauling and spreading the same	10 00
Plowing and fitting the land	6 00
16,000 strawberry plants, at $4.00	64 00
Cost of setting, etc., at $1.50 per day	28 87
Cultivation, cutting runners, etc	88 79
Cost of mulching, including the labor	24 93
Top-dressing and labor to be applied next spring	10 00
Interest on land worth $300	21 00
Interest on capital invested in labor, etc	20 00
Wear and tear of crates and boxes	10 00
Total cost	$353 59

"We will now suppose the crop to produce at the same rate as that of last season, 281 bushels to the acre, which crop suffered considerably from drought during the first part of the fruiting season, and from the effects of which it did not fully recover. Reckoning its value at $3.20 per bushel or ten cents per quart, this will make the gross receipts of one acre of strawberries $899.20. Subtract from this amount the cost of cultivation, $353.59, and $269.76, or three cents per quart for picking and marketing, and there is left a net profit of $275.85 per acre.

"Doubtless the cost of production may be materially reduced in case of a lower price of labor, which in the above estimate we have reckoned at $1.50 per day. Manure and mulching may be had perhaps at lower rates. Then, too, the price of nice fruit, it will be seen, is placed pretty low. We have given that at which the fruit sold here last year to 'middle men.'

"But let not the beginner presume too much on statistics, showing what has been accomplished. A little experience will be found of great value in the cultivation of the strawberry. No one need expect to raise 300 bushels from an acre except on good soil well manured and thoroughly cultivated. Let me add that by no means can a thorough mulching during winter be neglected, at least in this latitude, without danger of losing the labor previously expended.

The Money Pear.

NOT a new pear, by any means, but the pear from which most money can be made, as Dr. E. Ware Sylvester says, in a late number of the *American Rural Home:*

"This pear is too well known to need a description. Its pyriform shape, its red cheek, its white flesh, its abundant juice, its semi-acid-saccharine flavor are suggested to the experienced pomologist by the mere mention of the name.

"The Louise Bonne de Jersey when cultivated on the quince, bears earlier and is

larger, than when cultivated on the pear root, but it will give most abundant satisfaction on either stock.

"It seems better adapted to the colder region of our country, for when cultivated south of the Potomac its leaves fall prematurely and the fruit is not perfected. But for Western New York it is hardy, healthy, and gives more general satisfaction than any one pear, with the exception, perhaps, of the Bartlett, and I am not willing to except even that grand old musky pear. It seems at home on the quince, and when not *murdered annually* by the knife, will bear usually the second year after planting, and every succeeding year if properly cared for.

"In one of my orchards there are four rows of Louise Bonne de Jersey, ten in each row, on the quince, and trained as half standards; they are set ten feet by ten feet, and hence occupy less than one-eighth of an acre, and have other orchard trees immediately adjoining, on the north and south, giving them no advantage on account of situation. They were planted in 1858, and are now thirteen years in the orchard. They commenced bearing very early, and I herewith append the figures of their *money* abilities for four years. These figures are not from memory but from the account of the sales of the pears as they were sold by a commission merchant, in Washington Market, N. Y.

"I am fully aware that the figures are not large; but the trees have not been stimulated with rich manure, but have been sometimes in grass and sometimes cultivated, sometimes dressed with muck and lime or salt, or both, just enough to keep a *small* uniform healthy growth; and besides, they have not been cut, slashed, pinched and nipped from one year's end to the other, but have been sparingly, and, as I think, judiciously pruned. But here is the four years' record of the 'Money Pear,' otherwise called Louise Bonne de Jersey.

"Four rows, ten trees each; (forty trees in all), ten feet by ten feet, occupying less than one eighth of an acre:

1868.	
40 crates, (bushels) at $6	$240 00
1869.	
14 half-barrels at $6	$84 00
1 half-barrel No. 2	2 50
Total for 1869	$86 50
1870.	
4 half-barrels at $6.25	$25 00
2 crates	4 50
Total for 1870	$29 50
1871.	
35 half-barrels at $4.39	$153 65
5 crates at $1.65	8 25
Total for 1871	$161 90
Total proceeds from $\frac{1}{8}$ of an acre	517 90

"An acre of Money Pears at this ratio, would give an average product each year of $1,035.80. If we deduct one-third for the expense of packages, freight and com

mission, we have left an *annual* return of $690 per acre, as the reward of labor, interest on capital, taxes, etc. What other crop will pay $690 per acre each year, for four consecutive years?"

A Profitable California Fruit Ranch.

CHARLES NORDHOFF writes to the *Tribune* an interesting article upon fruits of California, and more particularly gives the history of a successful fruit ranch near Stockton:

"The ranch, whose particular history I am to relate, was purchased twelve years ago by the present owner, for $5,500. It was at that time in part under cultivation, with orchards old enough to have trees in bearing. The house in which the owner has lived ever since was already built. The ranch contains a section. 640 acres, with a frontage of a mile on the river. This whole frontage, which makes about sixty acres, is in fruit of various kinds. Of this, fifteen acres are in grapes, seven in pears; the remainder is divided between apples, apricots, cherries, plums, peaches, quinces and figs. Two years ago the receipts of this ranch from all its products aggregated $12,000. This year, though the yield is greater than ever before, the price of fruit being so much less, the net profits will not exceed $7,000. I shall record the items that go to make up this amount, and begin with the pears. A box of pears contains forty pounds. The shipping of these was commenced the last of May. The Madeleine variety was the first sent to market. Of these, 500 boxes were sold at $4 per box, the fruit at first selling at seven cents per pound. Next came the Bloodgood and Dearborn Seedling. There were sixty boxes of these. At first they sold for $2.50 per box, then came down to $1 as the season advanced. The Bartlett came next. Of these a car-load, 420 boxes, was sold to go East, at $1.50 per box. In New York, they brought $6 per box. These boxes contained sixty pounds. Beside these, there were 200 boxes of Bartletts sold in San Francisco at $2 per box.

"The White Doyenne pear came next. There were fifty boxes of these, which sold at $1 per box. Then came that little jewel of a pear, the Seckel. Three hundred boxes of these sold at an average of $2 per box. Two hundred boxes of Winter pears, at $1 per box, and 100 boxes sundries, not included in the previous statement, make up the list of pears.

"Cherries are generally very profitable. The yield per ton, in money, is greater than that of almost any other fruit. But through misapprehension in regard to the nature of the soil, which proved to be alkali, the cherries on this ranch proved almost a failure. Had the soil been as supposed, the profits of the cherry orchard would have been some $4,000 per annum. As it is, only $200 were received this year, though last year the receipts were $500.

"There is something very strange about this alkali soil. In the pear orchard there are rows of trees extending all the way through, in which the trees are dwarfed to half the size of those that grow on each side of them, and the pears that grow on these trees are so exceedingly bitter that no use can be made of them. There happened to be a streak of alkali running through the soil just there. There were 150

baskets of plums sent to market, which brought $1 per basket. Of figs 100 baskets, bringing from 75 cents to $1.50 per basket.

"Of apples there were 2,000 boxes at an average of $1.25 per box. The vineyard furnished 1,500 boxes of grapes. The Hamburgs averaged $1.50 per box; the Muscats $2. There were more than twice as many Muscats as Hamburgs sold."

Carrots.

BY ALEXANDER HYDE.

THE Carrot belongs to the botanical order of Umbelliferæ. In its wild state it is a noxious weed, commonly known as bird's nest, from the nest-like shape of the umbel. The root of the wild carrot is small, tough and strong-flavored. Pliny speaks of the carrot as cultivated in Italy in his day, but it was not introduced into England till about the commencement of the seventeenth century. The root of the cultivated varieties is large, succulent and nutritious; but the flavor is too strong to be agreeable to most persons, and the carrot is consequently seldom cooked separately, but is mainly used for soups. For feeding stock, especially horses, this root is greatly prized, and is cultivated in large quantities. It contains a gelatinous substance called pectin, which is thought to exert a very healthy influence on horses. Certain it is, that they are fond of carrots, and look sleek and healthy when fed upon them. A famous horseman once told us that he preferred a bushel of carrots and a bushel of oats for his horses to two bushels of the latter. The analysis of the carrot shows no such value. Carrots contain at least 80 per cent of water, while the water in oats is only 16 per cent, and, of the solid matter in these two kinds of feed, the per cent of flesh-forming and fat-forming principles in oats is three times what it is in carrots. The effect which carrots exert on horses must be attributed to their health-giving virtue, or some subtle principle which we do not as yet understand. Our own observation leads us to the conclusion, that horses that are worked lightly do better on a mixed feed of carrots, hay and oats; but when put to hard work they need more grain. When wintered without work, hay and carrots make a better food than hay and oats. Before being put to service again in the spring the allowance of carrots should be diminished. For colts and young horses, carrots are just the thing to promote growth and a vigorous constitution. For cows, also, they are excellent, producing a large flow of rich and high-colored milk. They therefore deserve a place on every farm and in every garden.

Carrots require a well-pulverized and enriched sandy loam for their perfect development. On such soil, and with good care, a crop of a thousand bushels is often harvested from an acre, though eight hundred bushels may be considered a good yield. We have found it better to raise them after a crop of corn or some other hoed crop, to which manure has been applied abundantly, as when manure is applied directly to the carrots they are apt to be forked and abound with rootlets. The soil should be plowed or spaded deeply, so that the roots may run down 18 or 20 inches without obstruction. For feeding to stock we prefer large carrots, three or four inches in diameter at the top, and with a smooth spindle body 16 to 20 inches long. For this purpose we give preference to the long Orange variety; others claim that the White

Belgium gives a greater yield. For table use, the smaller French Horn variety is preferable; it matures earlier, and the flavor is milder.

In field culture the rows should be 18 inches apart, and the carrots six inches apart in the rows. In gardens the rows may be ten inches apart, and the carrots three or four inches from each other. In either case vigilance must be exercised not to let the weeds get the start of the crops, as the carrot is of feeble growth at first, and if once choked and stunted by weeds seldom recovers. They may be sown in the spring as soon as the ground is dry enough to be worked, and four or five pounds of seed are sufficient for an acre. As the seeds are covered with a beard, which renders even sowing by a drill-harrow difficult, they should be thoroughly rubbed before being put into the hopper. The seed should be fresh, certainly not over two years old.

Johnston gives the composition of the carrot as follows:

Water	80.00
Starch and fibre	9.00
Pectin	1.75
Sugar	7.8
Albumen	1.1
Oil	.35
Total	100.00

Others make the per cent of water higher, even up to 88 per cent. Carrots, like all other root crops, draw heavily on the inorganic matter of the soil. A crop of 20 tons of roots and four tons of leaves to the acre will exhaust the following amounts of inorganic matter:

Phosphoric acid	39 lbs.
Sulphuric acid	57 "
Lime	197 "
Magnesia	29 "
Potash	134 "
Soda	103 "
Chloride of sodium	85 "
In all	644 "

Wood ashes are therefore a good fertilizer for carrots, as they supply all this inorganic matter. Plaster, lime, bone dust and common salt are also good, but do not furnish all the elements required.

The leaves of carrots are beautiful, and as valuable as they are beautiful. The common practice of leaving these leaves on the field at harvesting is wasteful. They may do the land a little good, but they will do the cows and horses a greater good. They are highly ornamental, used as greens, in the arranging of flowers. No green is more light and graceful. If a large carrot, in the winter, be placed in a vessel of water on the mantel, it will send out numerous delicate leaves, which will serve to cheat winter of its gloom. Another mode is to cut off the top of a carrot and partially hollow it out, so that it will hold water, and hang it up in a window, furnishing it occasionally with a little water. The graceful, living green leaves make a pleasing contrast with the general deadness of the winter.

A Country School-House.

THE illustration we present in our frontispiece, is an excellent design for an ornamental school-house, by Geo. E. Harney, architect. The architectural features are very picturesque, and with appropriate ornamental grounds there might be developed a scene of pleasing beauty. This design is intended to accommodate about 50 scholars. Both sexes are admitted to the principal rooms. And there are separate entrances for the boys and girls, and separate play grounds. *E* is the covered stoop at the boys' entrance, and *C*, that of the girls' entrance. *B* is the boys' entry, and *G* is the girls' entry. They both measure about 8 feet by 9, and are provided with hooks, etc. for clothing. *A* is the main school room, 16 by 32, and about 14 feet high. The window sills are about 4 feet from the floor, and the walls to this height are wainscoted with pine, and above it, with the ceiling, are lathed, plastered, and tinted. *D* is a room 15 by 16, which may be used for infant scholars, or as a class room. It is finished in a similar manner to the large room. The building is designed to be built of brick upon a stone base. The water-table, window-sill course, and window heads are all of Ohio stone, and the roofs are slated and surmounted by a cast iron cresting The windows are of enameled glass, like church windows. The rooms have ample ventilators, opening into a space above the ceiling, and thence discharging into the large ventilator on the ridge of the roof.

The building is estimated to cost $4,000.

How to Grow Strawberries.

IN spring I prepare the ground for a crop of early potatoes, manuring it so as to grow that crop well. Work the potatoes well, keeping them clear of weeds. When the crop comes off I give a light coating of manure, plow the ground deep, pick off weeds, etc., harrow and level it well. I then line out the rows three feet apart, go to the nursery bed with a flat box or basket, lift the plants with ball of earth, and carry them to the ground prepared for planting. A boy goes before with a garden trowel, digs the holes about four inches deep, sixteen inches apart in the row, immediately before the planter; he fills each hole with water; the planter drops in the plant and covers the root with dry earth, pressing lightly. By so doing, no matter how hot and dry the weather may be, I never fail to have a full crop the next season; and that is as much as you can have by spring planting. I prefer potatoes as a crop, as the ground is thereby well cleaned. I generally plant all through the month of August. I plant, on an average, 3,000 plants every season, It is very tedious, but it will pay. If I had not plants of my own, I would purchase a few hundred in the spring, manure the ground and work them well, picking off the stems before they bloom. They will have made good plants by August. In this section I find the best kinds are, 1st, Wilson's Albany; 2d, Green Prolific; 3d, Agriculturist. I have tried many others, but fall back on these. The above remarks apply more especially to growing for market.—*Contributor to Rural New Yorker.*

What to do with my Young Apple Orchard is the Vexed Question.

MR. EDITOR: I have been a subscriber and constant reader of the HORTICULTURIST since 1857. The natural inference would be, that I have regarded it as good authority on all matters pertaining to horticulture. More particularly since you have honored the editorial chair, I carefully note every article pertaining to fruits and their culture; and I must confess that, by so doing, I now find myself in quite a quandary in regard to the best manner of treating a young orchard, after the first four or five years. I have one of that age that is very promising, and two or three younger, of equal promise. I think I have done justice to them so far, and am disposed to do my duty in the future, if I can be satisfied what my duty is. During the last few years different ideas have been advanced by different authors, on this subject, entirely antagonistic. For instance, there is John Smith, a man who is well and favorably known in the horticultural sphere, and whose suggestions are entitled to extra credit, says: Give your orchards clean culture, keeping all weeds and grass down, the ground loose and mellow, if you wish to obtain the best results. This is all good common sense, and is adopted in my mind for at least one month, when Pete Jones, a man also possessing equal worth, and whose suggestions are entitled to credit, says, John Smith is wrong; by all means seed your orchard to grass to insure the most satisfactory results. Now, there seems to be a number of John Smiths, and about as many Pete Jones' advancing these opposite ideas. Then there is somebody else, whose name is not given, in the February number of the HORTICULTURIST, who is a good witness for Pete Jones, endorsing his grass bill and offers an amendment, by adding cattle to the grass. I hope Mr. Jones won't accept the amendment, as every one knows that cattle have good taste for pruning trees, but miserably bad judgment.

Now this conflict between the two parties is well calculated to make one who wishes to do the right thing, stand still and do nothing, fearing to adopt either plan, else he might err in his good intentions. This is the dilemma I find myself in just now, and I fear I am not alone. Where is the remedy?

Could not a national convention be called, composed of all the John Smiths and Pete Jones', and a compromise be agreed upon that would be honorable to both parties and put a quietus to all present and future troubles on this point? If you think favorably of my suggestion. I will pursue the even tenor of my way until after the action of said convention, promising obedience and strict conformity to all the mandates set forth by them.

KENTUCK.

Bowling Green, Ky.

Editorial Note.—If your trees are growing too luxuriantly, producing too much wood and no fruit, it would be pardonable to grow grass (clover) in the orchard, for a year or two, to restrain this excess of vigor, but we would never advise the practice of grass culture as a *rule*, nor for any great length of time. We believe ourselves in thorough cultivation and mulching in time of fruiting.

Pencil Marks by the Way.

BY OCCIDENTALIS.

More About the Sapsucker.

IN these "Pencil Marks," published in the HORTICULTURIST for March, 1871, page 90, I referred to the fact that the Sapsucker had been known to pick through the rough bark of the apple trees and abstract the larva of the Codling Moth secreted there; and I expressed the opinion that they do not peck the trees for the sake of the sap.

Since then, however, I have witnessed what seems to upset my theory, and to lessen my faith in the innocence of the bird. In the orchard of my friend, W. N. Grover, Esq., of Warsaw, Illinois, my attention was directed this winter, to a number of trees where these birds had been at work. He had frequently seen them thus industriously engaged, and had watched the effects. Many of his trees were pecked so badly as to seriously damage them. The injury was, in most cases, done well up the stem of the tree, near the limbs, and generally in places where the bark was healthy and smooth. In many instances, almost the entire surface was pecked away, leaving the inner bark bare, as large as one's hand. Mr. G. was decided in his opinion, that the bird was after food—not as has been the opinion of many, in the shape of larva under the bark—but that the fresh bark itself was eaten. In proof of this position, he had repeatedly sought for this loose bark about the roots of the tree and could find none. He stated that a neighbor had killed specimens of the birds, and had found this fresh bark in their crops.

Being anxious to arrive at the whole truth in the matter, I spent some time in investigating it, passing from tree to tree, examining the bark, and seeking out the hiding places of the larva. I found trees where the quantities pecked away would measure near, if not quite a handful; yet in no case could I find more than a thimbleful on the ground beneath. What had become of it? I found that in all cases the pecking had been done most where the bark was smoothest and freshest. I found, too, that many of these same trees had Codling Moth larva secreted under the loose bark, entirely undisturbed; in some instances quite near to where his birdship had been industriously at work. The larva, however, were not numerous on these trees, although they afforded plenty of loose bark for hiding places. But I did find a few instances in which the larva had been found and taken, evidently by a bird, but by what kind I do not pretend to say. Reader! let us have further testimony before the case of the Sapsucker is sent to the jury.

Paulonia Imperialis—An Inquiry.

I have some fine specimens of this flowering tree, two years old, in sand in my cellar. They are said to be tender, and will not bloom in the open air north of Cincinnati or St. Louis. Mine have been taken up each winter and transplanted in the spring. But will some one having experience, tell me why it will not be a good plan to transplant them in pots, and thus by dwarfing, cause them to bloom earlier—treat them much as we treat the Oleander in the Middle States?

Does Grape-Growing Pay?

At a late meeting of the Adams County (Ill.) Horticultural Society, the above question was discussed at length, and the following resolution passed, viz.:

"*Resolved*, That grape-growing does pay, and that we recommend the Concord." One member expressed the opinion that at three cents a pound in bulk, or six cents in boxes, grapes will pay a handsome profit. Another said that if he could be assured of three cents per pound in bulk, he would be willing to plant every acre of his farm to grapes.

Apple Production at the West.

The Orchard Committee of the Alton (Ill.) Horticultural Society reported, "at the risk of excommunication," that "the apple raising business is overdone." The report was non-concurred in by the Society. Members contended that good, smooth and well colored apples have always brought good prices. That good Winesaps, Janets, Smith's Cider, Willow Twig, and even the poorer Ben Davis and Big Romanite, will sell readily; that no other branch of horticulture pays better than growing apples; that the trouble is in growing inferior fruit and the varieties not wanted; that this winter good specimens are bringing three to three and a half dollars per barrel in Chicago, and six to ten dollars in New Orleans. It was urged that good policy required the continued planting of new orchards, as there will be a market for all the apples we can grow.

In view of the facilities for transportation to the remote places in the South and West, the great increase of population, as well as the annually increasing consumption among the people everywhere, this advice of the members was reasonable and proper.

Banks of the Mississippi, Feb. 1872.

Wisconsin State Horticultural Meeting.

THE annual winter meeting convened in Madison, Tuesday, February 6, continuing its sessions through Wednesday and Thursday. It is passed, and I can say, with much pleasure, that it has proven one of the most pleasant and profitable sessions ever held. Fruit-growers were present from all parts of the State, enthusiastic, successful, practical men, who came here to learn still more, and to let their light shine, that our entire State might bring forth fruit in its season.

The first session was opened by the annual address, by President J. S. Stickney, who "came," he said, "to speak of delicious fruits, beautiful flowers, and magnificent trees, things full of interest, yet so common and plenteous as to be often overlooked or passed thoughtlessly by." He plead for the "autumn landscape, with its drapery of purple, commanding the attention and admiration of all, but few gave it a thought or careful study." A lawn, well kept; anybody can have it; "*nothing but grass*," and yet few appreciate it; and quite too often confined to the surroundings of the merchant *princes* instead of the farmer. He urged the propriety of planting our street borders with trees, and thought that if allowed to stand, the growth would yield a profit to compare favorably with the adjoining lands. Showed the necessity of more care in handling our gathered fruit, as, under its present management, fruits

from other States brought twice that of our own State, simply because it was properly gathered.

This address was followed by one from Geo. W. Minier, of Minier, Ill., who spoke of the great benefit conferred by horticulturists. The man who introduced the Catawba grape, boasted that he had done more good than if he had paid the National debt. Horticulture awoke our better natures; would call upon all men and women to lend it their aid. It would assist to stay the sin of drunkenness, which was annually sweeping away 60,000 of our fellow-men. Schools should teach the natural sciences; such books as Miss Youman, on botany, should be used, and others of like import. Send horticulturists to the legislature, to educate the people in the mysteries of the goddess Pomona, and relatives Ceres and Flora. The earth, the air and sun were words of great import; their influences, understood and correctly handled, resulted in bountiful summer harvests, autumn fruits and winter enjoyments. God had written upon our every muscle, labor; a dyspeptic stomach was as much an abomination in the sight of God as lying lips. The noble art of horticulture should be taught in our common schools; geology, botany and mineralogy, these three in one. Thus educated, the boys and girls of the State would be the boast and hope of the world, the early impressions being—

> "Like vases in which the essence of roses distil,
> You may break, you may ruin the vase if you will,
> But the scent of the roses will linger there still."

The Secretary, in his report, reviewed the year's doings; spoke of the uses of horticultural societies; thought that though visible progress was not always as satisfactory as might be wished, yet the leaven was there and working out for ultimate good. Urged upon professional horticulturists the necessity of more attention to their home adornments, that, by example and precept, the general taste may be cultivated. Suggested that some rising genius, who has a love of study for our insect enemies, be appointed as State entomologist; thought our State should not be behind other States in this respect. One member had died during the year—Ingraham Gould, of Beaver Dam, in his sixty-first year.

Following this, Vice-President Tuttle read a paper on "Tree Propagation with a View to Obtain the Greatest Degree of Hardiness." This was a well-written paper, tending to show that we may grow many sorts in Wisconsin by adopting a more varied mode of working. Thought there might be a system of double working, so as to obtain valuable results. For this purpose, would use the Transcendent Crab by long scion and short root; by this means roots are got from the Transcendent, and are always hardy; it was almost invariably sound in body and top. On this he would work such sorts as are liable to bark-burst or sun-scald. These may be worked at one year old; others that are usually damaged in the bark of the tree, should be deferred in the working till the Crab is two years old, and then worked in the limbs. Mr. T. is confident we may realize good results from this new mode.

Several local horticultural societies were present by representation, and all were reported in a flourishing condition.

D. B. Wier, of Illinois, read a paper on "Pruning," illustrating his ideas by well-drawn specimens of mutilated trees, and also his *beau ideal* of a perfect tree.

Would plant young trees, or those two years old, and relect none but low-topped trees, preferring those with not more than six inches of body; prunes but little; his "best tree had never had a limb cut from it;" made a distinction between low-headed and so-called low-headed. The reckless method of pruning was compared to tight lacing. Nature will produce better trees than tree doctors; few could assist nature rightly. Grape vines can be treated artificially, but not so with apple trees.

The advice of Mr. W. was different from most of the oldest orchardists present. Mr. Tuttle said that the writer was holding the same positions that he held when he set his first orchard; but he had been converted; would never plant any more of the *low*-headed trees, but now wanted those *so* called, which, in his mind, meant with bodies about two or two and one-half feet long.

Mr. Tuttle's views seemed to be those generally adopted among the members present.

Mr. Wier also read a paper on "Insects Injurious to our Fruit trees." This paper was also explained by illustrations drawn on canvas from life, and proved of great interest to his hearers, as a large proportion of those present had never seen their insect enemies, even on canvas. Prominently among them Mr. W. places the Codling Moth. His drawings show this very plainly. In connection with this, he exhibited his codling moth trap, being one that had been used, and showing how well it seemed to adapt itself to the wants of the moth, as a hiding place.

C. H. Greenman explained how a neighbor entrapped moths, by hanging about in his orchard vessels containing molasses, and though some doubted its efficacy as a trap, he *did* catch a large number, and always had a fine large quantity of apples when all around him lost their crops.

J. C. Plumb read a paper on "Fire Blight;" reviewed its progress; reviewed the theory of cause; concluding that it results from a defective circulation, caused by an excess of nutrition, producing veritable apoplexy. The remedy being in planting on poorer soil, to secure a more moderate growth, and using less means of stimulation through the summer months.

G. P. Peffer read a paper on the "Production of New Varieties from Seed," taking the position that varieties will reproduce themselves from seed, if not affected by the pollen of other sorts; explaining his method, and exhibited fruit which was produced by his method of fertilization by artificial means, giving in detail the principles of his theory.

A paper by W. Finlayson upon "Soil, Aspect and Protection for Orchards," developed the fact that, in his opinion, that soil was best which partook of a strong clay loam, of a limestone nature; was opposed to the cool northern aspect, as not tending to develop the best qualities in fruit. The southern was objectionable for the health of the tree; but the best was upon the summit, where the morning sun will continue its brightness till lost behind the distant hills at night. Protect by belts of timber, to break the force of the wind, and also the bodies on the southwest side by a board, or evergreen planted.

Suel Foster contributed an interesting paper on "The Growth of Trees and their Absorbing Powers;" referring to the beautiful process of nature in the production of new varieties, and in the power of the tree in obtaining its nourishment.

Some of his ideas, I think, are not commonly accepted by tree theorists. It was interesting and valuable.

Dr. C. Andrews, of Marengo, Ill., and Siberian Apple notoriety, read an elaborate paper on the "Profits of Fruit Culture," from which we are led to believe that the apple is *the* representative fruit, all others are subordinate, and that its great value is not in single fortunes some one may make, but in the aggregate quality that may be raised—and paramount to all others, especially for a northern latitude, is the the Siberian species.

Mr. Pinney read an excellent paper upon "Destruction of our Forests, and the Effect it would have upon the Climate;" showing how timber modified the temperature, roots of large forest trees continually drawing heat and moisture from the ground; and showed the effects to a country by denuding it of its forests, bringing to the hearer's mind scenes from the old world, and foreshadowed the same or similar results to our own country, even our own fair State.

Mr. Minier spoke encouragingly and enthusiastically of Timber Culture. Said he had a wood-lot five miles distant, but could not afford to go that distance for his fuel; cheaper to raise it on his home place.

The election of officers resulted in the unanimous choice of: President, J. S. Stickney, Wauwatosa; Vice-President, A. G. Tuttle, Baraboo; Recording Secretary, O. S. Willey, Madison; Corresponding Secretary, G. E. Morrow, Madison; Treasurer, G. A. Mason, Madison. Executive Committee, M. Anderson, Cross Plains, James Brainard, Oshkosh, H. M. Thompson, St. Francis.

Many papers were presented, but, for want of time, not read. I have only glanced at a tithe of the proceedings, but enough perhaps to show your readers that Wisconsin does not intend to be outdone.

O. S. WILLEY.

Alton Horticultural Society.

Reported for The Horticulturist, by O. L. Barler.

THE February meeting of this Society was held at the residence of D. Williams, in Alton. The day was clear and cold, the thermometer marking 4° above zero. President Brown called the meeting to order; and after attending to some business matters, the Society heard the reports of standing committees.

J. M. Pearson reported on Ornamental Planting, verbally. He said this was the time to make up the list of what is wanted to plant in the spring. He was decided in his recommendation of nursery-grown trees; they were much superior to those grown in the woods, cheaper and more likely to live. He spoke very complimentary of a variety of Weeping Birch, which was freely planted in the East in cemeteries, and would adorn any lawn. He was not satisfied with the Soft Maple; thought there were other varieties of Maple to be preferred, and not so liable to be killed by the borer.

Mr. B. F. Draper, Chairman of Small Fruit Committee, is a young member, and made his *maiden* report, which gave great satisfaction. He took up the subject of

Situation for Small Fruits, which he thought of first and great importance. It could be shown that many failures are traced directly to the fault of *situation*. He used to think himself fortunate if he could secure a southern slope for his strawberries; but, from experience and observation, he was now satisfied that it was the very worst selection that could be made, for the reasons: It is always the dryest; more difficult to fallow and subsoil in the fall; such exposure hastens the flowering; exposing to late frosts; if rain is not abundant, the berries ripen rapidly, do not grow to full size, and quality is not good. If rains come, the wash is very damaging to the plants, covering up some and laying bare others. He would not have a slope much any way; would prefer the level surface. The only objection to this is, want of proper drainage; you are compelled to underdrain, or adopt the *deep culture* process—and this is what is needed. The rich surface soil is not carried away; you get moisture, big crops and fine fruit. If you must plant on rolling land, plant the most fibrous-rooted plants on the steepest places. In this respect, I think they may be thus classed: Gooseberry, currant, raspberry, blackberry and strawberry.

Dr. Long thought he would not object to a gentle slope to the north, but in the main approved of the report.

Mr. J. M. Pearson said: This question of situation is, with most of us, "Hobson's choice—this or none." We must use the land we have. The objection to flat land is the stagnant water, after heavy rains, so as to prevent cultivation early in the spring; and, unless we can underdrain thoroughly, I do not see how we can avoid this. I would not plow deep, unless at the same time I underdrained.

President Brown advised deep plowing at all seasons, for all crops; preferred it to a coat of manure.

In answer to questions, it was stated that the summer and fall were very trying and disastrous to the strawberry plants; but they have not been injured since going into winter quarters. It was thought that fruits generally were not injured; the coldest weather reported was 9° below zero, on Monday, January 22d.

In answer to a question, how to get rid of moles? Mr. Riehl said: I have often caught and penned up moles, to learn their habits and diet, and I find they eat sweet and Irish potatoes, and vegetables generally, and can be poisoned; but the sure way is to watch for Mr. Mole, catch and kill him.

Mr. O. L. Barler opened the discussion on *Hot-beds and Hot-bed Culture*. He said: The man who essays to grow vegetables, especially if it be for profit, must get the start of *nature*. To do this, he resorts to artificial means—a sort of trickery—to win the sunbeam.

By the way, did you never think, or, rather, did you ever *not* think how much we gardeners are dependent upon yon Orb, which, in its boundless influence and beneficial effects, is the—

> "Best image here below
> Of its Creator?"

We set our *traps* of glass, through which the little insinuating and unsuspecting ray enters, but does not know enough to get out. There is nothing like glass for hot-bed coverings. Talk about oiled cotton cloth, or any other make-shift, it is not satisfactory.

For bottom heat, I have found nothing better than stable manure, mixed with leaves or other litter. The manure should first be heated in bulk, and then my practice is this: Build on the top of the ground to the depth of 10 or 12 inches, 18 feet long and 8 feet wide—gently press the whole by laying on 16 feet board and walk on it. On this I set my frame, made of inch lumber, 16 × 6 feet, and bank up to the top all around; in a day or two, I throw in rich mould to the depth of 6 inches, and immediately sow my seed. If of cabbage, cover lightly; if tomatoes, cover deeper—say one-half inch; and from this time I have as much care on my hands as if I had a *baby* to look after.

Mr. Hollister thought the manure retained its heat longer and is more uniform if worked over several times before made into the bed. A few years ago he made excavations in the ground for the manure; now makes his hot-beds on the surface, and prefers it.

The discussion was continued at some length, but nothing new or different from the usual practice was elicited.

The *dinner* was the next subject discussed, and it was entered upon with a relish.

After which, the Society having voted to embrace *agriculture* as well as horticulture in their discussions, the subject of *Cheapest Feed for Domestic Animals* was taken up.

President Brown opened the discussion. All things considered, he gave clover the preference; indeed, he had kept his horses fat all winter on clover; it was just the thing for mules; it is excellent for cows, and good for hogs. He was a clover man all over.

Mr. Schweppee inquired if clover did not give horses the heaves?

Mr. Hilliard: It all depends upon the curing and keeping of the clover. It is the dust that does the harm; I have put clover away in my barn green, just wilted, and taken it out in the spring in perfect order; this will not hurt stock.

E. A. Riehl used one peck of air-slacked lime to each load of clover; it was a perfect success. It can be put up in this way when only partially dried.

Mr. Pearson preferred salt.

Mr. Wm. Eliot Smith had filled his barn with green clover, wet with the rains, and by using the lime had an excellent feed.

Dr. Long preferred clover for cows; but would use clover and timothy, mixed, for horses.

Mr. Pearson put a damper on clover, and said *corn* is, by all odds, the cheapest feed for stalk. It takes 100 lbs. of good timothy hay to equal one bushel of corn, and, at present prices, the 100 lbs. of hay will cost as much as three bushels of corn. I am short of feed this year, and will not buy hay, but instead, will buy ground corn and mix with cut straw.

Your reporter can give but a small part of this discussion, the result of which seemed to be that clover was good, but corn is *king*.

Mr. Pearson moved that the Society discontinue sending copies of its proceedings to the agricultural papers and others throughout the country. Motion carried.

New York State Grape Growers' Association.

AT the annual meeting of the New York State Grape Growers' Association, held at Rochester, N. Y., 15th February, 1872, the following were unanimously chosen officers for the ensuing year:

President—J. H. Babcock, Lockport.
Vice-Presidents—C. L. Hoag, Lockport.
Dr. F. B. Seeley, Vine Valley.
G. W. Nichols, Hammondsport.
D. W. Burge, Peach Orchard.
Dr. H. H. Farley, Union Springs.
Corresponding Secretary—T. S. Hubbard, Fredonia.
Recording Secretary—G. F Wilcox, Rochester.
Treasurer—M. D. Munger, Canandaigua.

Weight of Fruit.

BY SUEL FOSTER.

HAS any State a legal standard of weights of green fruit? Barrels, boxes, packages and crates of fruit are of all sorts of sizes and shapes, and we seldom know how much fruit we buy when we buy a package. But grapes have been sold and bought by the pound as long ago as I knew anything about their sale.

In the Legislature of Iowa we have a Committee on Horticulture, and I have made an effort to get the weight of a bushel of green fruit established. I think such an act would be useful in every State, and in every market, and some other persons may take the hint by this and do the same.

The producer fills a crate of quart boxes or baskets, with nice soft ripe berries; another crate is filled with unripe hard berries; and when the ripe fruits gets to market it is not quite as good measure as the unripe, but the weight is about the same of either. I think a quart of grapes, cherries, raspberries, blackberries, or hulled strawberries, will weigh about one and a quarter pounds—40 to the bushel. If this was the established weight—40 pounds to the bushel—it would make but very little difference, after the custom was once established, whether a bushel weighed a little more, or a little less; I think it would be better to establish it at that or even at 32 pounds—one pound to the quart—than it would to make the quart so as to divide the fraction of a pound to less than one-fourth. Strawberries with their hulls on, of course, will weigh lighter, but there would be much justice in their being counted the same weight per quart as other berries.

My friend G. P. Wood, of Cedar county, Iowa, weighed eleven varieties of apples, and they averaged a little less than 48 pounds to the bushel—near enough, I thought, to call it twelve pounds to the peck, or one and a half to the quart. And I apprehend that if this was established for apples—pears, peaches and quinces should go at the same weight, for the better convenience of trade.

Can you, Mr. Editor, or any one else, give us any further light on the weight of fruit?

Young Evergreens and Tree Seedlings.

BY D. C. SCOFIELD.

AS soon as you receive your plants, prepare moist sand and place the plants in it, mixing it well among them, leaving out the top only, and pack closely. Do not expose them to the air a minute *at any time* till planted. Let them remain in the sand till your land becomes dry enough to work fine. Prepare a bed in clean, dry, rich soil, with thorough culture, ten or twelve inches deep and four feet wide, a little elevated. Along each side set stakes a foot high, on which to lay poles or strips of boards to sustain brush, or some other material, a foot above the plants, to partially shade them the first season. Common lath three-quarters of an inch apart nailed to strips in lengths convenient to remove when weeding is necessary, are best adapted to this purpose.

Setting Plants.

Make a trench across the bed, deep enough to place the plant against the side upright and not bend the root, and pack the soil *very* firmly against it; let it set a trifle deeper than when in the seed-bed, and so on, setting them six inches apart each way. When the planting is completed, mulch the surface with rotten leaves, spent tan bark, or saw dust. No protection for winter necessary. When the plants have stood in the bed two years, and become two to three feet in height, they should be removed to the timber-belt or forest plantation.

Planting Seed of Larch or Evergreens.

Prepare the bed as above, but in sandy soil. Sow the seed just as it is in rows cross-wise, four or six inches apart. If sandy soil is not at hand, sand must be imported and mixed with the surface soil, and also spread over the seed one-quarter of an inch in thickness, and this should be covered with a mulching of leaves or fine prairie grass, sufficient to preserve moisture till the seed germinates, when the mulching should be removed. Use the lath covering the first season as described above for covering plants. When the plants are two years old, transplant and treat them as above described for treating plants.

Temperature for Shipping Pears.

BY C. W. IDELL.

THE remarks of a correspondent in the March number, in regard to the temperature for pears, reminded me of an experiment that I made in shipping pears to the South during the past season. The experiment shows conclusively, to my mind, that temperature is very important, particularly in regard to their keeping qualities.

As you are aware, that during the past season pears were plenty and cheap in our city, and learning that they were high and very scarce in a southern city, on October

13th I took six barrels of State Dutchess, wrapped them separately in coarse straw paper, and repacked them in the barrels, after ventilating them slightly. This fruit was firm, but had just begun to color. After a seven days' voyage this fruit arrived in fair condition, and sold for eleven dollars per barrel.

On the 20th of the same month I sent thirteen barrels of native Vicars, some of which were very hard, while a few showed symptoms of ripening. The hard fruit I sent without, and the softer with paper. At the same time I sent ten boxes of beautiful California Vicars done up in white paper. All of this shipment arrived in poor condition, and sold for about the cost of transportation.

On the 26th of the same month I sent twenty boxes of Winter Nelis, which also arrived in a damaged condition, and sold at a low price.

The California fruit was in perfect condition, and knowing they possessed remarkable keeping qualities, I never doubted of their going all safe, as I knew the same lot here was keeping beautifully.

On the steamer the fruit was placed where it was cool, and could not receive damage from heating from the boiler, and had the best of care, yet it decayed badly. It did seem strange to me that the Dutchess should carry so well, while the Vicar should rot, and it being a winter pear.

I would like to ask some growers, who have a large experience with the Vicar, if it rotted more this season than usually with them; or did it ripen earlier in the season, in proportion to other varieties; and if they shipped it to a distance, what success did they meet with?

The Fruit Interests of the West.

BY SUEL FOSTER.

IN our section we have plenty of strawberries, raspberries and currants. Plums and quinces we seldom mention. Pears and cherries are abundant, but the grape is second to the apple only.

The readers of THE HORTICULTURIST will understand by this that the apple is our main crop of fruit, and that we at the West have a list of varieties different from the Eastern lists. I want to impress upon all, both East and West, that our lists, as usually recommended, are generally much too long. There is but one variety proved most profitable for July, one for August, and so on, and the most profitable sort for March will also answer for the three succeeding months. This brings my list down to *nine*. But we want a greater variety. We want a list which we call "for family." There are choice varieties which have proved a little deficient in hardiness, or health of tree, or quantity of product; and yet the excellence of the fruit induces us to plant the tree, although the fruit costs us from 25 to 100 per cent more than our market sorts.

So we see the orchardist has much to learn in order to select the right varieties. Every year gives us additional knowledge of what to plant; new varieties are con-

stantly coming; and those who read horticultural literature, and attend the horticultural meetings, they only can keep up with the times.

In an early season like that of 1871, we like to see some of our varieties late in putting out—such as the Rawle's Janet, which has given it the name of "Never-Fail." Let me name a few others that are late in blooming: Northern Spy, Mother Hubbardston Nonesuch, Rome Beauty, Westfield, Seek-no-further, *Wine Sap, Sweet Pear Apple, Haskel Sweet, Fall Orange, Lowell, White Bellflower, Talman Sweet. It might be well to have some regard to the late blooming of these varieties, and plant a few of them on that account. The above are not our first choice for general planting.

Early Bloomers.

The early bloomers are Alerson's Early—although I do not find this in our fruit books, it is my first choice for a July pie apple—Early Harvest, *Red June, Sweet June, Summer Pearmain, Golden Sweet, *Late Strawberry, Maiden's Blush, Benoni, Kentucky, Duchess of Oldenberg, Warfield, Belmont, Striped Sweet Pippin, Yellow Bellflower, Dominc.

Medium.

I might add a list that are medium in time of blooming: Red Astrachan, *Jonathan, *Roman Stem, *Dyer, Rambo, *Ben Davis, *Willow Twig, *Fameuse, *Small Romanite, Wagner, English Golden Russett, *Early Pinnock, *Williams' Favorite.

Those marked thus (*) are a list of twelve recommended by our State Horticultural Society for Central Iowa.

New Fruits in Indiana.

BY J. H. HAYNES.

While Kansas boasts of receiving the eighty dollar gold medal for her excellent fruits, Indiana can boast of producing more fruit, especially apples, in 1871, than any other Western State, and to her the East is indebted for large shipments last fall, exceeding those of any previous year.

She can also boast of some wide-awake horticulturists who are not a whit behind their brethren, but a little too modest to assert their claims.

Our soil and climate are well adapted to the successful growing of the apple, pear and grape, and all we need is an extensive trial of the newer fruits, so as to find reliable varieties to supersede the old kinds.

Among the new apples which are very promising, are Grimes' Golden, Lawver, Burns, Sylvester, Moore's Extra and Blenheim Orange Pippin—the latter and the Lawver being far superior to any apple in my knowledge.

Of the Blenheim Orange Pippin, Hon. Elihu Burritt (writing to me from England) said it was the choicest apple he had seen in Europe or America.

The Lawver is the Baldwin of the West, and only wants to be seen to be appreciated.

In the production of pears we give the challenge to any sister State to excel in the next meeting of the American Horticultural Society. With good culture our orchards are productive and comparatively free from that dread enemy, blight.

Pear growing as yet is not extensive enough to give a surplus, but young orchards are springing up all over our State.

Of the new pears, Mount Vernon, Goodale and Souvernir du Congress are all equal to what is claimed of them in quality of fruit, hardiness and productiveness. The Mt. Vernon fills a place hitherto vacant—*i. e.*, a choice early winter pear. In quality it is very good. Growth rank, but somewhat straggling.

The Goodale is a very early and an abundant bearer. Fruit uniform in size and very good in quality. Tree fine grower, forming a very symmetrical head.

Souvernir du Congress is monstrous in size and decidedly delicious in quality. Its only fault is, it matures at a time when pears are abundant. Tree, a stout, healthy grower.

The Marshal Wilder, St. Louis and Doyenne Janvier, new French pears, give much promise, but their real fruiting qualities are yet to test. If they prove good bearers, the quality of fruit, and growth of tree, are such as to make them valuable.

Grapes we can produce equal to or superior to Kelley's Island. In my judgment our last season's crop was far superior.

Concord, Hartford, Ives and Delaware are our reliable kinds, but we are striving to find something better in all general qualities than these, and I will say not without strong hopes of succeeding.

Croton and Senasqua fruited here last season; fruit very good; vines hardy, having stood exposed during the winter of 1870–71, when the thermometer showed 22 degrees below zero.

Onondaga bids fair to excel the Delaware in all respects; keeps very fine and till late.

Carpenter and Grant have the appearance of being foreign in fruit, but the vines are quite hardy. The Carpenter is equal to the Black Hamburg in quality, and is a very good grower.

Sumner, a seedling of Mr. R. Stewart's, is equal to Concord in hardiness and growth of vine, but very much better in quality of fruit and size of bunch and berry.

Paxton, Warden, Arnolds and Rodgers' Hybrids all are filling the claims set forth by their originators.

From these you may conclude that our prospects are good, and that we may justly hope to make rapid progress in grape culture, and that if Indiana has been slow in the past, she is sure, and will yet make a record worthy of notice.

Delphi, Ind.

Editorial Notes.

Greenhouse Plants—their Care and Culture by Amateurs.

At the January meeting of the Jacksonville Horticultural Society, Illinois, Mr. Joseph Heinl, the proprietor of the largest and best-filled greenhouse in this part of the State, took the floor, and gave the Society much valuable information in regard to the growing and care of greenhouse plants. The first step necessary to success is to secure sound healthy cuttings, two joints in length; root in common sand with bottom peat; as soon as well rooted remove to two-inch, or thumb pots, three-fourths full of soil, composed of common soil, rotten wood and sand. Pots must be porous—especially avoid hard-burned or glazed pots. Never use saucers; they hold water, saturate the roots of plants, and cause disease. Syringe often, to protect plants from insects; even the red spider can be kept in check by this means. The green fly is easily exterminated by fumigating with tobacco. The shell louse, which infests the oleander and similar plants, may be destroyed by the use of soap-suds. Sulphur is a sure remedy for mildew, but must be used with care, and afterwards washed from the plants, or it will destroy the foliage. He urged the frequent cultivation of all out-door flowers during drouth; would not waste time in watering, but keep the hoe and rake moving, which would insure much better results. Plants for winter flowering should be started in spring, and not allowed to blossom until wanted for use.

Black Knot on the Plum.

D. B. Wier says in a western paper, that the way to prevent the black knot is never to plant on too heavy and wet soil; secondly, to cut off all affected parts in May and June, and cover the wounds with a thick paint of white lead, turpentine and oil. He also recommends planting only the Wild Goose plum and other varieties of the Chickasaw family, which do not bear black knots. It may be well to add that no one should expect to succeed with the process of excision, unless the malady is taken in time, and before it has made much progress over the tree. We have found a solution of chloride of lime applied to the wounds made by the cutting, to prevent the disease breaking out a second time at these places, as frequently took place where this application was omitted. We may also add, on the subject of soils, that the worst cases we have known were on light, dry, gravelly locations.

How to Destroy the Codling Moth.

The horticultural editor of the *Country Gentleman* (Jno. J. Thomas), after a visit to the extensive apple orchard of Oliver Chapin, East Bloomfield, N. Y., which is one of the finest in the United States, and covers over 100 acres of land, in a fine state of cultivation, gives to the public the secret of his success in conquering and

destroying the Codling Moth, the great pest of the apple tree. Seventy acres of this orchard, about thirteen years old, was cleared of this insect the past season, *at the rate of about one acre an hour.* The affected fruit, as every one is aware, has a feeble hold on the tree, and soon drops to the ground. If a bearing branch is struck with a pole when the apples begin to show the presence of the insect at the blossom end, those that are affected will drop; the sound ones will adhere to the branch. Acting on this fact, Mr. Chapin goes through his orchard with a pole, and striking the branches, the injured specimens drop to the ground, and are picked up and destroyed. Two men with poles usually knock off the wormy specimens about as fast as one boy gathers them into a basket. Where they are very numerous, more boys may be needed. As the fruit all hangs downward on the stems, the affected points may be easily seen from the ground, by the exudations from the "blossom," and the men with poles know where to strike. The wormy fruit may be thrown into a large stream or pond and the larvæ thus destroyed, but if the apples float ashore, they will crawl out and escape. A kettle of hot water may therefore be better.

Mr. Chapin informs us that he has tried a series of experiments to determine the season when the insects commit their depredations. The earliest winged moths which he has found appeared on the fourth of June. These came from the cocoons in various hiding places and crevices, where they had passed the winter. About the 15th of July he first detected the presence of the worm in the young fruit by the exudations already alluded to. They continue appearing for some weeks. Hence the best season for the first attack is about the middle of July. By caging the insects, and watching their transformations, he finds that a second brood comes out early in August. He consequently attaches great importance to making the first attack in July a very thorough one. By doing so, but few insects escape for the second attack on the fruit, and the number of late summer specimens is much diminished, so that instead of having most of his apples spoiled by this second brood, as would otherwise be the case, very few are injured. He finds that the moth will not travel far in search of a place to deposit her eggs, if there happens to be plenty of fruit near at hand for this purpose; but in the absence of loaded trees, she will fly to an indefinite distance. Near the buildings where apples were stored the larvæ came out in great numbers from the crevices where they had hid to undergo transformation, and the trees were badly affected, and a large share of the fruit is ruined, while in remote parts of the orchard, but comparatively few are found. He does not, therefore, fear the results of neglect on the part of his neighbors, so long as they raise apples enough to keep their own moths at home, although it would be better for all to make common cause for their destruction. Some of our readers will perhaps be surprised at the small number of affected fruit in Mr. Chapin's orchard, requiring two men to knock off enough for one boy to pick up; but this exemption was doubtless to be attributed to the thorough manner in which his work was performed, and to the thinning of their numbers, and the prevention of their increase.

Steam Heated Houses for Vegetables.

Edgar Sanders tells about a greenhouse at Chicago heated by steam for producing unusually early vegetables. The amount of coal consumed per day at Miller Brothers' establishment is one ton, but screenings answer well enough for the purpose. One of the prettiest sights he ever saw, in the way of young growing crops, is at this place. It consists of one table, 160 feet long, filled with radishes, at this writing, Feb. 9, just about ready to pull. They were sown, uniformly, at two inches apart each way, as true as if planted, and there is hardly a plant missing in the whole distance. The seed was extraordinary good. The opposite side is good enough, although there are some vacancies. There is growing here altogether about 750 running feet of these greenhouses, filled with radishes, part as above, part with radishes and lettuce, alternating with about 250 feet of cucumbers, the latter just beginning to run nicely. At the far side of the house containing the best patch of radishes, they are reckoning on $5.00 per light as the proceeds.

Rose-Buds.

The commercial value of Rose-Buds, at special important holiday seasons, would astonish the ordinary lover of flowers. Peter Henderson, in an article to *Hearth and Home*, gives a few ideas of how often the dainty rose-bud brings its high price of $1: "Twenty years ago camellia flowers retailed at from fifty cents to one dollar each, and no piece of flower-work was thought complete without them. Now they are at a discount, and do not throughout the season average half the above named price. Now rose-buds, that then were not worth as much by the dozen as a single camellia, are now nearly of equal value, and some particular kinds even more so. One of the leading florists on Broadway informed me that in the week ending December 2d, he sold one hundred buds of the Mareschal Niel Rose for a hundred dollars, for which he paid the grower fifty dollars. 'Tea' roses, as they are called, are required this season in every basket or bunch of flowers, and the bouquet makers are nearly driven to their wits' end to get them. The fashion for Tea-roses has already spread to the country towns, and hardly a day passes that orders are not sent to us that we cannot fill. Church fairs, which did not formerly invest in our expensive and perishable commodities, now find that the Tea rose-bud for the button-hole is sought after by hundreds of purchasers. I was waited on the other day, by the 'flower committee' for a church fair in one of our suburban towns. The first item on their list was three hundred Tea rose-buds. The wholesale price was twelve dollars per hundred, yet they were much disappointed that only one hundred, instead of three hundred, could be spared. The number of glass structures for growing rose-buds, in the vicinity of Boston and New York, has probably been doubled during the past year, yet the price has advanced one-third. The kind mainly grown are Bon Silene (carmine-purple) and Safrano (orange yellow). The Safrano is popularly known as *the* Tea-rose, but there are a great many others belonging to this class. The Mareschal Niel (golden-yellow) and the Lamarque (white) are grown, but not so extensively as the 'Tea' varieties, as they require greater age before they begin to flower, and being climbers flower best when trained to trellis-work. The large price paid for the buds of the former, however, will no doubt stimulate to its more general cultivation."

The Magnitude of Vick's Seed Business.

A correspondent of the New York *Evangelist*, visiting Vick's warehouse at Rochester, says: "During the busy season he averages a receipt of 200 orders per day; and from two to four persons are required all the time to do nothing but open the letters. All business is classified so that there is the utmost simplicity and perfect system. Over twenty tons of flower bulbs were sold last fall. One hundred and twenty persons are employed in his establishment, of which seventy-five are girls. The cash receipts for six months were $309,000, and for the year $500,000. In his farm for growing seeds, six to seven acres are devoted to Phlox, five to Asters, four to five in Dahlias, four in Zinnias, two to three in Verbenas, two in Pansies."

Color Influence on Vegetation.

Mr. Bert has studied the influence of light, heat and color on vegetation. In order to test the effect of green light on the sensitiveness of the Mimosa, he placed several plants under bell-glasses of different colored glass, set in a warm greenhouse. At the end of a few hours a difference was already apparent. Those subjected to green, yellow or red light had the petioles erect, and the leaflets expanded; the blue and the violet, on the other hand, had the petioles almost horizontal, and the leaflets hanging down. In a week those placed beneath blackened glass were already less sensitive; in twelve days they were dead or dying. From that time, the green ones were entirely insensitive and in a four days more were dead. At this time the plants under the other glasses were perfectly healthy and sensitive; but there was a great inequality of development among them. The white had made great progress; the red less; the yellow a little less still; the violet and the blue did not appear to have

grown at all. After sixteen days the vigorous plants from the uncolored bell-glass were moved to the green. In eight days they had become less sensitive; in two more the sensitiveness had almost entirely disappeared, and in another week they were all dead. Green rays of light appear to have no greater influence on vegetation than complete absence of light; and Mr. Bert believes, adds the *Academy*, that the sensitive plant exhibits only the same phenomenon as all plants colored green, but to an excessive degree.

Lime for Soils of Fruit Orchards.

On most soils, or in most localities, a proper dressing of lime is useful to both peach and pear trees. There are some soils where it will not prove of much benefit, but we are unable to give a certain or infallible indication by which the propriety of its application may be known before making the trial. It would not be so likely to be useful where the ground had been previously repeatedly or heavily limed, or where the soil was poor from a want of the application of yard manure or by plowing under green crops. We have known it to double the growth of trees on soils that appeared to be quite similar to others where no benefit was produced. Over-doses, or an uneven application, might be hurtful or of no use. Common lime may be applied safely at the rate of a hundred bushels or two per acre, but magnesia lime should be used more cautiously. There is no material difference between common stone lime and burnt oyster-shell.

Cultivation of Strawberries.

In answer to a question about the cultivation of strawberries, the *Country Gentleman* says: "Great leading requisite is constantly kept in view, namely, *to allow no weeds to get above the surface.* This is the great cardinal essential, which must not be departed from. After the plantation is set out in clean, well prepared soil, stir the ground often enough to destroy the sprouting weeds before they get to the light. The work may be then done with less than a tenth of the labor required after the weeds are several inches high; and all the labor of this frequent stirring is more than repaid by the increased growth and vigor given to the plants, to say nothing about the weeds. If the plantation is small, the work may be done with a garden rake; if large, with a one-horse cultivator, or, perhaps better, with a fine toothed one-horse harrow. If it is attended to thoroughly through autumn, the plantation may be mulched at the beginning of winter with straw. It will be better, especially for heavy soils, to remove the mulching in spring, and mellow the surface one or more times before the plants blossom. This may be done by raking the mulch into every alternate row, and then after the denuded spaces are stirred, to rake it back again and do the other rows. The mulch being replaced by flowering time, the berries will be kept clean. Some cultivators, who have small plantations, do not disturb the mulch in spring, but loosen the soil through it with a pronged hoe—but whatever course is adopted, see that the weeds do not grow."

Horticultural Notes.

Winter Killing of Fruit Trees.

Mr. Quinn has usually taken a decided position in favor of constant cultivation of the ground, but in a recent number of the *Tribune* he says: "With grass culture much less wood is made, but it is better matured and seldom suffers from winter killing, no matter how changeable or severe the weather may be from November to April. We have grown the Lawton for the last sixteen years, and while the ground between the rows was kept under culture, we suffered constantly from winter killing. But of late years, since we gave up cultivating the ground, there has been little or no loss from this cause."

P. C. Reynolds, in consideration of this subject, writes to the *Rural Home:* "We had once in New Jersey a plantation of Lawtons, which we cultivated highly for three years, causing a fine growth of canes which froze down regularly every winter. We sold the place, and its cultivation was neglected, the plantation growing up to grass and weeds. Revisiting it afterwards, we found an immense crop of berries on canes that were alive to the tips.

"We have had a similar experience on our place here in Rochester, to which we referred a few months since in the *Rural Home*, and expressed the opinion, that, if after a plantation of Lawtons were well started, we should cease to cultivate it, there would be no difficulty in growing good crops of berries in ordinary seasons.

"To no variety of fruit trees are the high culture theories less applicable than to cherries. Their tendency when growing rapidly to burst their bark, exude gum, and blight, is familiar to all who have attempted to grow them according to modern ideas. Most of us can remember when cherry trees, growing in the grass-covered door-yard or along the highway, or in fence corners, were healthy, productive, and long-lived; but how few recent attempts to raise cherry orchards on rich, well cultivated soils have proved successful. A writer in the *Journal of Horticulture*, says: 'Some years ago, a neighbor bought one hundred cherry trees and set them out in an orchard, and began to manure and treat them in every respect as he had done his apple orchard, which was in a thriving condition. In a year or two many of the trees burst their bark, turned black, and part died; this continued until three-fourths of the whole were dead, or nearly so, being quite worthless. He then stopped manuring, sowed his land down to grass and thus saved the remainder. We know another orchard, now some years old, that we set out for a neighbor, where the trees have been kept in grass ever since the second year after they were set. These trees have made a good, sound, healthy growth each year, and latterly, even for ten years past, except a single year, have borne good crops of fruit. There is not a more healthy cherry orchard in the country. These trees have never suffered from the bursting of the bark nor from wart.'

"The most healthy and uniformly productive cherry trees that we are acquainted with around Rochester, grow on the very light, sandy soils along the Ridge Road. We have known the cherries from moderate sized trees to be sold for over twenty dollars."

THE LIEB CHERRY.—A correspondent of the *Gardener's Monthly* says: "This cherry was brought from Germany twenty years ago, and was planted on one of the highest points in Galena, where this tree has withstood extreme cold winters without injury, and has never failed to produce an abundant crop of fruit (except when the blossoms are destroyed by the late spring frosts). The fruit is very large, of a crimson color, nearly sweet, while the flavor is not surpassed by that of any other cherry. It ripens within a few days of the Early Richmond, and the fruit has never failed to bring twenty-five cents per quart in the Galena market. It has been named and recommended by the Jo Davies County Horticultural Society, also by Robson, Soulard, Kittoe, and others.

Cranberry Culture.

The marshy lands near Berlin, Wisconsin, have advanced in price from $1 or less an acre to hundreds of dollars an acre. Some forties are held at $25,000. These lands are being cultivated to cranberries; hence their increased value. Cranberry culture is also a leading industry in New Jersey, where an acre of marsh land, well set in cranberries, is worth one thousand dollars. Those who have marsh lands hereabouts should make a note of these facts.

American Grapes.

A correspondent of the Boston *Spectator*, after a late trip through the wine growing countries of Europe, is convinced that American grape-growers follow too servilely the process of European culture. It is well known that the European grapes

can be grown upon this continent only on the Pacific slope, where the climatic conditions resemble those of the western coast of the Eastern continent. Our native grapes being adapted to an entirely different class of conditions, would naturally be expected to require a different treatment. Our excessive pruning, for example, is thought by many to seriously cripple the productive power of American grapes. To test this matter for himself, the writer in the *Spectator* commenced to vary the treatment of his own grapes from the imported methods. He now raises his trellises to the height of twelve feet, and trains his vines so as to produce the heaviest fruitage at the top of the trellises. He finds that their elevation above the ground, and subsequent greater exposure to the sun's rays, secures them from rot and mildew. While these diseases, with leaf-blight and tendency of fruit to bursting, affect, to a considerable extent, the vineyards of his neighbors, he is entirely without annoyance on that score.

From a Single Acre.

General Naglee, of Santa Clara, has gathered from one acre of his vineyard, twenty-seven thousand four hundred and thirty-six pounds of grapes. Number of vines, twelve hundred and forty-four. The general took seventy-nine pounds from a single vine. The variety is known as the "Mission" Grape. This yield at a cent a pound, would give two hundred and seventy-four dollars and ninety-six cents per acre!

The Narragansett Raspberry.

The *New England Homestead* in relation to this berry, says: "It is a seedling from the Brinckle's Orange, and is six years old from the seed, having been in bearing four years. It bears luxuriantly, the berries averaging much larger than any other variety. The fruit is cone-shaped, of an excellent flavor, the color bright crimson, bearing carrying better than any of the favorite market sorts. It belongs to the everbearing family, producing fruit on the new cane which comes up in the spring, thus carrying the crop along until the last of October, or until the frost kills the foliage and green fruit. The canes are large, growing on good, rich ground, which they require, six or eight feet high. They are perfectly hardy, but it is better to mulch them in the fall with long stable manure, and lay them down, giving them some protection, such as will save them from the cutting winds, and yet not exclude the air.

Winter Pruning of Fruit Trees.

It has come to be recognized among horticulturists that pruning, while the branches of trees are frozen, is not good practice. The bending of limbs while in this state often results in fracture, and abrasions in pulling out pruned branches often result in injury to the tree. Besides this, the evaporation from newly cut surfaces often results in shriveling the buds on the branch below the surface.

Better defer the pruning until the trees are free from frost. The cut surfaces, if possible, should be covered with some substance to exclude the air and prevent evaporation. A good and simple coating for this purpose is a thin paint of white lead and oil applied with a small brush to the cut surface.—*Western Rural.*

Training of the Chinese Wistaria in a New Style.

This is a beautiful runner, popular everywhere. It is made to run on trellises—grows very rapidly— and its long racemes of blue flowers are beautiful. Florists have discovered a process to make this plant grow in tree form so as to support itself. This is the plan: "A young plant is first trained to a stake six feet high. When it reaches the top it is headed off. The second year, or as soon as it is stiff enough, the stake may be taken away, and the young plant will support itself. It will never make running branches after this, as it expends itself in the effort to overcome gravitation. A beautiful umbrella head is formed, with hundreds of drooping flowers in spring."—*Willamette Farmer.*

Ed. Note.—We doubt the ability of the vine to support itself in the second year, still we believe it can be grown in that form after three or four years' training.

The Lesson of the Garden.

The most humiliating thing to me about a garden, is the lesson it teaches of the inferiority of man. Nature is prompt, decided, inexhaustible. She thrusts up her plants with a vigor and freedom that I admire; and the more worthless the plant, the more rapid and splendid its growth. She is at it early and late, and all night—never tiring nor showing the least sign of exhaustion.

And the weeds are not all. I awake in the morning, and a thriving garden will wake a person up two hours before he ought to be out of bed, and think of the tomato plants, the leaves like fine lace-work, owing to black bugs that skip around, and can't be caught. Somebody ought to get up before the dew is off (why don't the dew stay on till after a reasonable breakfast?) and sprinkle soot on the leaves. I wonder if it is I. Soot is so much blacker than the bugs, that they are disgusted, and go away. You can't get up too early if you have a garden. You must be early due yourself if you get ahead of the bugs. I think that, on the whole, it would be best to sit up all night, and sleep day times. Things appear to go on in the night in the garden uncommonly. It would be less trouble to stay up than it is to get up so early.—*My Summer in a Garden.*

Preventing Iron Garden Tools from Rusting.

It is said that if iron garden tools are laid for a few minutes into a solution of soda, they will be protected from rusting for a long time, even if exposed continuously to a moist atmosphere.

The Love of Rural Life.

The habit of finding enjoyment in familiar things, that susceptibility to Nature which keeps the nerve gently thrilled in her homeliest nooks and by her commonest sounds, is worth a thousand fortunes of money, or its equivalents.—*Henry Ward Beecher.*

The principal value of a private garden is not understood. It is not to give the possessor vegetables and fruit, that can be better and cheaper done by the market gardeners, but to teach him patience and philosophy, and the higher virtues—hope deferred, and expectations blighted, leading directly to resignation, and sometimes to alienation. The garden thus becomes a moral agent, a test of character, as it was in the beginning.—*Charles Dudley Warner.*

Distances for Fruit Trees.

This subject was discussed lately by the Ontario Fruit Growers' Association, and the conclusion come to was this, that the most suitable distance for apple orchards was thirty feet each way; but in case of using kinds which did not have spreading heads, such as the Early Harvest, Duchess of Oldenburgh, Northern Spy, etc., these might just as well be planted more closely, say twenty feet each way.

Close planting should be the rule in more northern localities; and those who had practiced it, together with low training, had been uniformly successful.

One grower advocated the quincunx form, planting the trees in rows thirty-three or forty feet apart each way, and then planting a tree in the center of each square formed by every four trees.

Low Heads or High.

At the same meeting, the uniform testimony seemed to be in favor of six feet as the proper height of training branches of fruit trees from the ground. If the branches came lower than this they impeded cultivation, and the weight of fruit and leaf bent them over to the ground, affording considerable inconvenience.

The Journal of the Farm.

This appears for April as a dignified magazine, with a cover and ornamental title engraving. It seems to betoken prosperity. Published by Baugh & Sons, Philadelphia, Pa.

Encouragement to Plant Forest Trees.

Iowa, by the act of its last Legislature, has given a decided encouragement to the culture of forest trees. Every acre of forest trees planted releases from taxation for ten years a valuation of $100; and for each acre of fruit trees, there is an exemption for five years of tax on each valuation of $50. This looks like business, and puts the subject in a form of tangible self-interest to every farmer in the State to carry it out.

Strawberries and Early Potatoes.

The best acre of strawberry vines that I saw last fall, was raised among early potatoes. The Early Rose potato was planted as early in April as possible, placing one piece only in a hill, thirty inches apart each way; and the strawberry plants also were planted thirty inches apart each way on the same ground at the same time; that is, one strawberry plant placed midway between the potato hills in the rows one way, leaving the rows the other way open for cultivation.

Subsequently the tilling was done with a one-horse cultivator and hand-hoe. In July, the potatoes were dug out and sold for $97, cash. At the same time the strawberry plants were nicely cleaned and hoed; soon after the runners began to cross the rows pretty freely. The cultivator was then run through the rows for the last time, and a hand followed to replace the roots of any runners that were disturbed. Very little more was needed, although a hand went over the field three or four times with a hoe in his hand, pulling any stray weeds, and with the hoe and hand *placing the runners so as to occupy all the ground*, which was well-covered with plants in the fall, and the land was very clean and mellow. The labor on this acre cost $1.12½ per day. The cost of adding and caring for the strawberry plants is estimated not to be very much from $20. This acre was estimated to be worth $150 more for having the strawberry plants on it.

The owner of this patch was instructing me how to raise strawberries. Says he: I plant squashes, cucumbers, melons, cabbage or sweet corn with a bountiful supply of manure, the next year early potatoes with the strawberry plants, using no manure except plaster, sown broadcast to avoid weeds.

The essential points are: first, that the plants must be set very early and looked to to see that they are all living, as late set-plants will not give a full crop next year; second, the potatoes must be removed very early, so that the plants will more perfectly cover the ground. Thus he gets one full crop of strawberries almost free from weeds. But, said he, if I should try to get a second crop from the same setting it would be quite possible, but the labor after the first crop was picked would cost me four times as much as it does to plant a new bed every year.

I have seen strawberry plants raised among early peas and other crops, but generally a poor stand of plants was obtained, and a full crop could not be realized until the second year, when the land would be full of weeds, and weeds are what the cultivator of strawberries most desires to avoid.—*N. P. Hedges, in Germantown Tel.*

Tulips for In-Door Culture.

The *Gardener's Magazine* says: "When grown in pots, tulips are treated precisely in the same manner as the hyacinth, but several bulbs are placed in a pot. When required to fill epergnes and baskets, and other elegant receptacles, it is a good plan to grow them in shallow boxes, as recommended for crocuses, and transfer them when in flower to the vase or baskets. In common with hyacinths and crocuses, they may be taken out of the soil in which they have been grown, and the roots washed clean, and inserted in glasses for decorating the apartment. For general usefulness, the early tulips are the most valuable of all, because of their many and brilliant colors.

Select List of Roses.

The *London Garden* gives the following select list of "very hardy roses" for beginners, to be planted in well drained and well manured ground, away from trees,

but not in a bleak exposure. In our severer winters, a few will need covering; and several will be recognized as old acquaintances by cultivators here:

Gloire de Dijon, Noisette.
Souvenir de la Malmaison, Bourbon
Alfred Colomb, hybrid perpetual.
Baroness Rothschild, do.
Baronne Provost, do.
Caroline de Sansales, do.
Comte de Nanteuil, do.
General Jacqueminot, do.
John Hopper, do.
Jules Margottin, do.
La Ville de St. Denis, do.
Madame Boutin, hybrid perpetual,
Madame Boll, do.
Madame Caillat, do.
Madame Clemence Joigneaux, do.
Madame Rivers, do.
Marechal Vaillant, do.
Senateur Vaisse, do.
Victor Verdier, do.
Blairii No 2, hybrid China,
Charles Lawson, do.

Editorial Notices.

Barry's Fruit Garden.

We are glad to welcome this volume at last. Among the Pomological volumes of our library, we always gave a cherished place to the old edition, and often consulted it. The new edition comes at a time when we greatly need good advice in this age of superabundance of new fruits, and we felt prepared to strike a sort of pleasant acquaintance with it, as soon as it appeared. Glancing over its contents, we find the principal work of revision has been in the revision of lists of fruits. Due justice has been done to those parts which relate to pruning, propagation, and nursey management. And in these topics no more reliable or practical guide can be found in the United States.

As it is written by one familiar with the details of the nursery, it will meet with favor from all the trade, while to the amateur, anxious for a judicious advice as to a good selection of trees for planting, it will be found the most reliable and best adviser of all works on fruit culture now extant. O. Judd & Co., publishers. Price, $2.50.

Farm Gardening and Seed Growing.

This volume, written by Francis Brill, formerly market gardener, near Newark, N. J., is devoted especially to the market cultivation of farm vegetables and seeds. In some respects it trenches over into the same ground occupied by Henderson's *Gardening for Profit*, but does not cover as wide a range. The directions of the book seem to be generally very practical and sensible, and the estimates of the author are reasonable. Price, $1. O. Judd & Co., publishers.

Willard's Practical Dairy Husbandry.

Mr. Willard's reputation as the most thorough and practical observer of the methods of dairying in the United States, will justify the assertion that none were better qualified than he to write so able a volume upon this subject. This book contains over 550 pages, of most minute detail and instruction upon all parts of dairying, from the care of dairy farms to the selection of stock, the management of milk, and the history of butter and cheese factories. Price, $3. Published by D. D. T. Moore.

California Fruit.

A box full of most noble specimens of California pears, from the orchard of C. W. Reed, Esq., Sacramento, Cal., were presented to us lately by Davis & Sutton, of Warren street, this city. The average weight was 15 ounces each specimen, and some were over a pound. The variety was Easter Beurre, the handsomest specimens

we ever beheld. It demonstrates to a certainty the practicability of the shipment of fruit to this city from so distant a point, and we should judge that the Easter Beurre is much the safer variety to ship, being late in ripening, an excellent keeper, and, as grown in California, of excellent quality. The specimens we received were of a rich yellow color, very attractive. We understand that this firm will, hereafter, engage largely in the sale of California fruit, grapes, pears, etc., as a specalty. We are under many obligations to them for these specimens.

Dreer's New Catalogue.

Mr. Henry A. Dreer has favored us with specimen of a new bean, which, in honor of its early ripening, we named the Tip Top, and will experiment with it this summer. It is a variety of the Wax Bean, much better than any yet introduced. Mr. Dreer's business seems to develop yearly with rapidity; and it is a pleasure to notice his continued success. His son, William Dreer, is now associated with him in the plant department at Riverton, and from the favorable estimation which the ladies seem to have of his plants, and the orders they send in, one would judge their "busy times" were well deserved. Mr. Dreer's Catalogue is not quite as pretentious as some others, but one can always rely upon getting good things at his store.

Window Gardening.

A new edition is now in press, and is expected to be ready by May 15th or 20th. The demand for it is unprecedented. We regret very much any delay, but our first edition was not sufficient to fill but half the orders.

Contributions.

We extend a cheerful invitation to all our subscribers to write for us any sterling practical articles. Do not let the editor do all the work, but come forward with your own pens, and help the cause, and tell your own experiences. Everyone who will do this, shall be gladly welcome.

Back Volumes of the Horticulturist.

Subscribers having back volumes previous to 1869, wishing to sell, will please communicate to us the number and price.

Canned Fruits.

The business of canning fruits has reached a point where it might almost be considered a science. In our large fruit-growing sections, canning factories are steadily multiplying, and besides the fabulous increase and sale of manufactures, there has been a steady tendency toward a *better quality*. The finest canned fruits we have ever eaten were presented to us last fall, just as we began our excursion to the Rocky Mountains, and besides what were then eaten with enjoyment, the past winter we have had opportunity to test several other kinds manufactured by Richardson & Robbins, of Dover, Del. Located in the heart of the great peach and fruit producing district of Delaware, they have the very best facilities for getting the freshest, largest, and nicest fruit for canning. Extra pains are taken to put up all these goods, and their reputation is considered the best in the United States. Finer canned cherries, peaches, pears, berries, never graced a table than the specimens we have enjoyed from their hands. A couple of jars of canned pears were among the assortment we received, one of Bartlett and one of Lawrence. Although the Bartlett was much the largest and finest in looks, yet the Lawrence was much the most rich in quality, and we are glad to learn, from the trials of Richardson & Robbins, that they considered it the finest of all pears for canning purposes. This idea will give new interest to the subject of growing pears for profit; to learn that surplus pears not needed for market, can be most wisely and profitably canned and sold at remunerative prices.

A Balcony Garden.